

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently amended) An apparatus, comprising:

- a die carrier having a surface;
- a heat spreader lid having a surface parallel to the surface of the die carrier, the heat spreader lid physically contacting the surface of the die carrier, and the heat spreader lid being mounted directly on the die carrier to form a lid cavity;
- an integrated circuit (IC) die mounted on the die carrier and within the lid cavity; and
- a cured mold compound disposed to fill the lid cavity and to at least partially surround the IC die, the cured mold compound being in contact with the surface of the die carrier and the surface of the heat spreader lid.

2. (Original) The apparatus according to claim 1, wherein the heat spreader lid has a dispensing hole formed therein to facilitate injection of a mold compound solution into the lid cavity and an air outlet hole formed therein to allow air to escape from the lid cavity.

3. (Original) The apparatus according to claim 2, wherein heat spreader lid is made of metal.

4. (Original) The apparatus according to claim 3, wherein the heat spreader lid includes a thermal interface material interposed in thermal conducting relationship between the heat spreader lid and the die.

5. (Original) The apparatus according to claim 4, wherein the thermal interface material is coaxially aligned with the die and includes a width and a length dimension which are substantially the same as a corresponding width and a corresponding length dimension of the die.

6. (Original) The apparatus according to claim 5, wherein the thermal interface material comprises a cold form thermal interface material.

7. (Original) The apparatus according to claim 6, wherein the die includes a first surface, a second surface and a plurality of lateral sides extending between the first and second surfaces; the first surface includes a plurality of electrical contacts coupled to the die carrier; the second surface is disposed in an abutting relationship with the thermal interface material; and the mold compound extends between the heat spreader lid and the die carrier and surrounds the lateral sides and the first surface of the die.

8. (Original) The apparatus according to claim 7, wherein the die is mounted to the die carrier by a flip-chip mounting.

9. (Original) The apparatus according to claim 8, wherein the flip-chip mounting includes a plurality of solder bumps coupling the die to the die carrier.

10. (Previously presented) The apparatus according to claim 1, wherein the mold compound is a polymeric material.

11.-15. (Canceled)

16. (Currently amended) A system, comprising:

- an integrated circuit (IC) package including a die carrier, a heat spreader lid physically contacting the surface of the die carrier, the heat spreader lid being mounted directly on the die carrier to form a lid cavity, an IC die mounted on the die carrier and within the lid cavity, and a cured mold compound disposed to fill the lid cavity and to partially surround the IC die; and

- a circuit board having mounted thereon the IC package; a dynamic random access memory coupled to the IC package; and an input/output interface coupled to the IC

package.

17. (Original) The system according to claim 16, wherein the IC die is a microprocessor and the circuit board is a motherboard.

18. (Original) The system according to claim 17, wherein the input/output interface comprises a networking interface.

19. (Original) The system according to claim 18, wherein the system is a selected one of a set-top box, an entertainment unit and a DVD player.

20. (Original) The system according to claim 16, wherein the heat spreader lid has a dispensing hole formed therein to inject a mold compound solution into the lid cavity and an air outlet hole formed therein to allow air to escape from the lid cavity.

21. (Original) The system according to claim 20, wherein heat spreader lid is made of metal.

22. (Original) The system according to claim 21, wherein the heat spreader lid includes a thermal interface material interposed in thermal conducting relationship between the heat spreader lid and the die.

23. (Original) The system according to claim 22, wherein the thermal interface material is coaxially aligned with the die and includes a width and a length dimension which are substantially the same as a corresponding width and a corresponding length dimension of the die.

24. (Original) The system according to claim 23, wherein the thermal interface material comprises a cold form thermal interface material.

25. (Original) The system according to claim 24, wherein the die includes a first surface, a second surface and a plurality of lateral sides extending between the first and second surfaces; the first surface includes a plurality of electrical contacts coupled to the die carrier; the second surface is disposed in an abutting relationship with the thermal interface material; and the mold compound extends between the heat spreader lid and the die carrier and surrounds the lateral sides and the first surface of the die.

26. (Original) The system according to claim 25, wherein the die is mounted to the die carrier by a flip-chip mounting.

27. (Original) The system according to claim 26, wherein the flip-chip mounting includes a plurality of solder bumps coupling the die to the die carrier.

28. (Original) The system according to claim 27, wherein the mold compound is a polymeric material.